

Summary Statement on the Science, March 28, 2012, Douglas DeNatale, Technical Committee Member, Sustainable Water Management Initiative (SWMI)

Let me say, first, that I was very optimistic about SWMI when our meetings began in late 2009. I reassured many of my colleagues that I believed science would dictate policy, not bias, not ideology, not emotional arguments. However, sadly, it seems that the SWMI process has been marching toward a predetermined outcome – to limit public water-supply withdrawals. This comes in spite of the scientific evidence, which is ambiguous at best, deeply flawed at worst.

Here are a few examples of the flawed science presented by the Commonwealth:

- In its analysis of the impact to aquatic habitat, USGS/DFW counted fish species that are native to the western part of the state, but are not native in the eastern part of the state, and used this data as an indicator of stress in eastern rivers and streams.
- Site-specific research performed recently for MWWA show that measured fluvial-fish populations do not uniformly decline when stream flow decreases, which is in direct rebuttal to Fish and Flow model predictions. In fact, in three of the five sites, using data from the Commonwealth, measured fish populations actually increased with decreasing flows, one was neutral and only one showed a decline in fish population with decreasing flow.
- The USGS/DFW reports a statistical association between groundwater withdrawals and declining fish populations. We must point out that an association does not imply causation. In other words, the association does not necessarily mean that groundwater withdrawals *cause* fish populations to decline. Further, the concept of groundwater withdrawals represents a hypothetical condition that does not exist in Massachusetts river basins, except perhaps in the rare case, because it excludes wastewater and septic return flows. Any analysis of stream depletion that leaves out the return flows is incomplete and artificially accentuates the impact of wells. So, what could the association between groundwater withdrawals and declining fish populations mean? A more plausible explanation could simply be: more wells, more people; more people, more pollution; more pollution, less fish.
- In its modeling, USGS/DFW treated groundwater withdrawals identical to a pipe withdrawing water directly from a stream. This oversimplification ignores the delayed effect of groundwater withdrawals on stream flows. This approach artificially accentuates low-flow conditions in August, making these conditions appear worse than they are in many cases.
- The USGS/DFW modeling predicts numerous basins with significant flow alteration, where there are no public water-supply withdrawals.
- Finally, the USGS/DFW analysis indicates that the primary factor associated with damage to aquatic habitat is impervious cover, presumed to be an indicator of water-quality impairment from urbanization. This should be no surprise. Much of the residue of human society washes into our rivers and streams. In fact, the analysis concludes that impervious cover is almost five times more deleterious than stream flow depletion. I ask you, if a hurricane blew over a giant

oak tree, one limb crashed through the roof of the house and another limb fell on the flower bed, which problem would a wise homeowner attend to, first? I would fix the roof!!

In conclusion, the SWMI process has failed to demonstrate that PWS withdrawals are responsible for widespread damage to aquatic habitat in Massachusetts. The Commonwealth is rushing headlong toward creating policy that – instead of protecting aquatic habitat – will hinder public water suppliers, curtail economic development and reflect poorly on government. It would be irresponsible for the Commonwealth to use SWMI as guidance in adopting new water management regulations until the USGS/DFW modeling is validated and the SWMI framework is pilot-tested.